

The Role of
Market Research
in Customer Service

INPUT

- 'Information' Gathered Objectively
- Help Plan Strategies for Success in Service
- Annual Trends Europe
- 'Benchmark' User Satisfaction

INPUT

NOTES:

FPRE-KH-2

Analysis of:

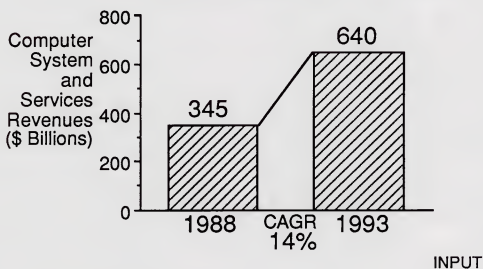
- Computer Markets
- Customer Service Markets
- Vendors' Service Offerings
- Users
 - Services Received
 - Services Needed

INPUT

NOTES:

FPRE-KH-3

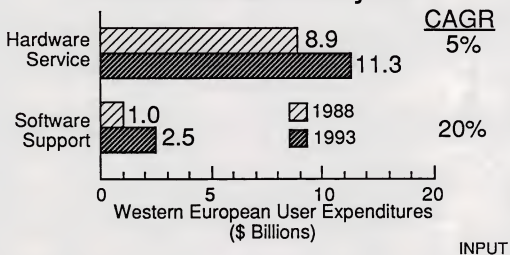
Worldwide Computer Market



NOTES:

FPRE-KH-4

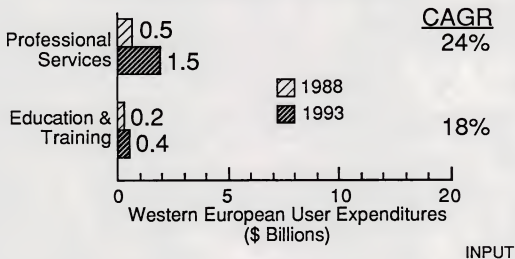
Customer Service Market— Service Sector Analysis



NOTES:

FPRE-KH-5a

Customer Service Market— Service Sector Analysis



NOTES:

FPRE-KH-5b

Software Support Satisfaction

0 Satisfaction Index Δ SI 0.5

Most Satisfied

- Hotline
- Capacity Tuning
- On-Site Support
- Consultancy/Planning
- Remote Diagnostics
- Problem Database

INPUT

NOTES:

FPRE-KH-6

Software Support Satisfaction

0.5 Satisfaction Index Δ SI 1.0

Least Satisfied

- Telephone Fix Speed
- Telephone Access
- Software Updates
- Software Installation
- Training

INPUT

NOTES:

FPRE-KH-7

Software Support Satisfaction

1.0 Satisfaction Index Δ SI 1.5

Concern

- Engineer Skills
- Documentation

INPUT

NOTES:

FPRE-KH-8

Hardware Service Satisfaction

0 Satisfaction Index Δ SI 0.5

Most Satisfied

- Consultancy/Planning
- Training
- Telephone Support
- Service Administration
- Remote Diagnostics
- Out-of-Hours

INPUT

NOTES:

FPRE-KH-9

Hardware Service Satisfaction

0.5 Satisfaction Index Δ SI 1.0

Least Satisfied

- Engineer Skills
- Problem Escalation
- Back-Up Support
- Call Handling
- Documentation

INPUT

NOTES:

FPRE-KH-10

Hardware Service Satisfaction

1.0 Satisfaction Index Δ SI 1.5

Concern

- Spares Availability

INPUT

NOTES:

FPRE-KH-11

Major Challenges and Issues

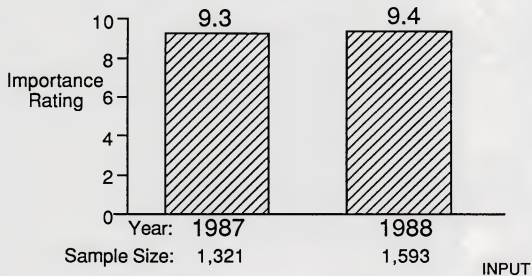
- Deterioration in User Satisfaction
 - Software Support
 - System Failure Rates
 - Systems Availability
 - Response/Repair

INPUT

NOTES:

FPRE-KH-12

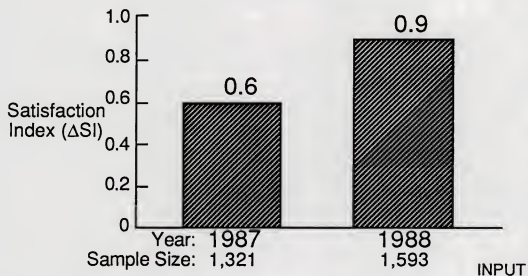
Systems Availability Trends



NOTES:

FPRE-KH-13a

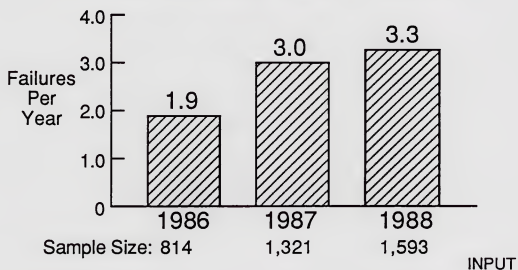
Systems Availability Trends



NOTES:

FPRE-KH-13b

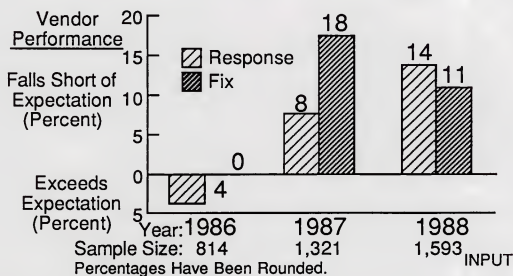
System Failure Rate Trends



NOTES:

FPRE-KH-14

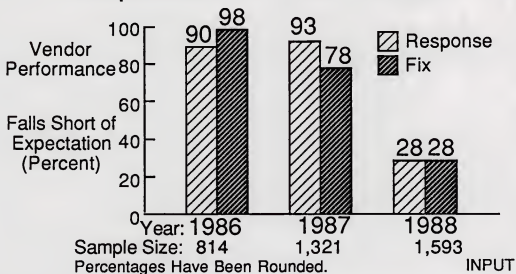
Hardware Service Response/Repair Time Trends



NOTES:

FPRE-KH-15

Software Support Response/Fix Time Trends



NOTES:

FPRE-KH-16

Country Comparisons

Hardware Service Satisfaction

(1.0) Satisfaction Index Δ SI 0

Oversatisfied

- Belgium

INPUT

NOTES:

FPRE-KH-17a

Country Comparisons

Hardware Service Satisfaction

0 Satisfaction Index Δ SI 0.5

Most Satisfied

- Netherlands
- Switzerland

INPUT

NOTES:

FPRE-KH-17b

Country Comparisons

Hardware Service Satisfaction

0.5 Satisfaction Index Δ SI 1.0

Least Satisfied

- France
- West Germany
- Italy
- Norway
- Sweden
- United Kingdom

INPUT

NOTES:

FPRE-KH-17c

Country Comparisons

Hardware Service Satisfaction

1.0 Satisfaction Index Δ SI 1.5

Concern

- Spain

INPUT

NOTES:

FPRE-KH-17d

Country Comparisons

Software Support Satisfaction

(1.0) Satisfaction Index Δ SI 0

Oversatisfied

- Belgium

INPUT

NOTES:

FPRE-KH-18a

Country Comparisons

Software Support Satisfaction

0 Satisfaction Index Δ SI 0.5

Most Satisfied

- Netherlands
- Switzerland

INPUT

NOTES:

FPRE-KH-18b

Country Comparisons

Software Support Satisfaction

0.5 Satisfaction Index Δ SI 1.0

Least Satisfied

- West Germany
- Italy
- Norway
- United Kingdom

INPUT

NOTES:

FPRE-KH-18c

Country Comparisons

Software Support Satisfaction

1.0 Satisfaction Index Δ SI 1.5

Concern

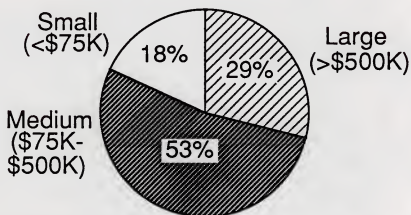
- France
- Spain
- Sweden

INPUT

NOTES:

FPRE-KH-18d

Sample Distribution by System Size



Sample Size: 1,593

INPUT

NOTES:

FPRE-KH-19

World Markets: 1988

	\$ Billions				
	U.S.	Europe	Japan	RoW	Total
Computer Hardware	62	38	32	7	139
Hardware Maintenance	14	9	7	1	31
Data Comm. Hardware	16	8	5	2	31

INPUT

NOTES:

FPRE-KH-20

World Markets: 1988

	\$ Billions				
	U.S.	Europe	Japan	RoW	Total
Data Comm. Maintenance	4	1	1	<1	7
Software	23	9	14	5	51
Computer Services	51	26	7	2	86
Total	170	91	66	18	345
					INPUT

NOTES:

FPRE-KH-21ab

World Markets: 1993

	\$ Billions				
	U.S.	Europe	Japan	RoW	Total
Computer Hardware	101	58	58	14	231
Hardware Maintenance	18	15	8	3	44
Data Comm. Hardware	30	13	9	6	58

INPUT

NOTES:

FPRE-KH-22

World Markets: 1993

	\$ Billions				
	U.S.	Europe	Japan	RoW	Total
Data Comm. Maintenance	6	2	2	1	11
Software	60	28	37	14	139
Computer Services	99	60	23	5	187
Total	314	176	137	43	670

INPUT

NOTES:

FPRE-KH-23ab

Service Market Analysis

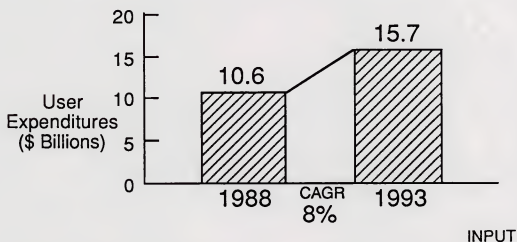
- Growth Areas
- New Service Offerings
- Competition

INPUT

NOTES:

FPRE-KH-24

Customer Services Market Western Europe, 1988-1993



NOTES:

FPRE-KH-25

INPUT

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CONFERENCE PRESENTATION - ATTACHED
• HARD COPY + SLIDES NEEDED BY FRIDAY 17
FEB IN LONDON LATEST - AM I IMPROVING IN 'NOTICE' TIME!
• PLEASE AMX ANY OVERLAP THU WEEK AS I AM
AWAY SAT - 14 FEB. I WILL SEND SOME MORE TOMORROW.
• MANY THANKS - IT WAS NICE TO MEET YOU
IN M.V.

Keith

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DATE: 2 FEB 89

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①

THE ROLE OF
MARKET RESEARCH
IN CUSTOMER SERVICE

INPUT



2 ✓

- o 'INFORMATION' GATHERED
OBJECTIVELY
- o HELP PLAN STRATEGIES
FOR SUCCESS IN SERVICE
- o ANNUAL TRENDS EUROPE
- o 'BENCHMARK' USER SATISFACTION



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P. 4

ANALYSIS OF :-

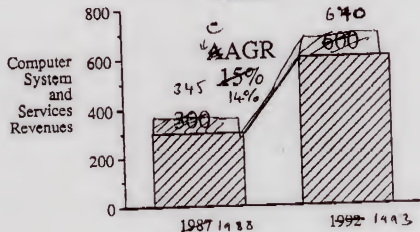
(3) ✓

- ° COMPUTER MARKETS
- ° CUSTOMER SERVICE MARKETS
- ° VENDOR'S SERVICE OFFERINGS
- ° USERS - SERVICE RECEIVED
- SERVICES NEEDED



Worldwide Computer Market

\$ Billions



INPUT

NOTES:

SLIDE PL - 2a

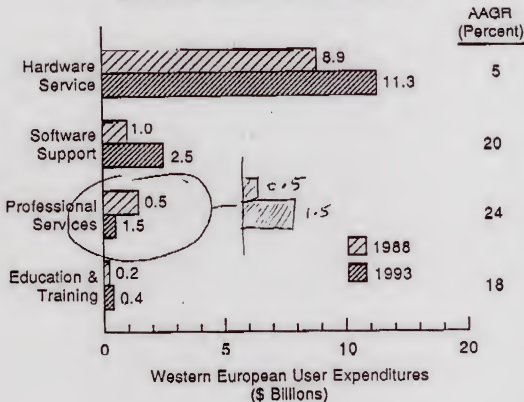
- Look at overall computer market for hardware and services (end user expenditure).
- Worldwide figures.
- 300 billion dollars 1987 - double in 1992 to 600 billion dollars.
- By 1995 all systems installed will have been replaced or obsolete, service organisations need to be ready to exploit these opportunities.



CAE8 IV-5

5 ✓

CUSTOMER SERVICE MARKET— SERVICE SECTOR ANALYSIS



X



CAE8 III-4

SOFTWARE SUPPORT SATISFACTION

Arden
 HEADING

Satisfaction Index Δ SI		
0	0.5	1.0
Most Satisfied	Least Satisfied	Concern
<ul style="list-style-type: none"> • Hotline • Capacity Tuning • On-Site Support • Consultancy/ Planning • Remote Diagnostics • Problem Database 	<ul style="list-style-type: none"> • Telephone Fix Speed • Telephone Access • Software Updates • Software Installation • Training 	<ul style="list-style-type: none"> • Engineer Skills • Documentation

↑
 slide 3

(8) ✓

↑
 slide 2

(7) ✓

↑
 slide 1

(6) ✓

TABLE 1

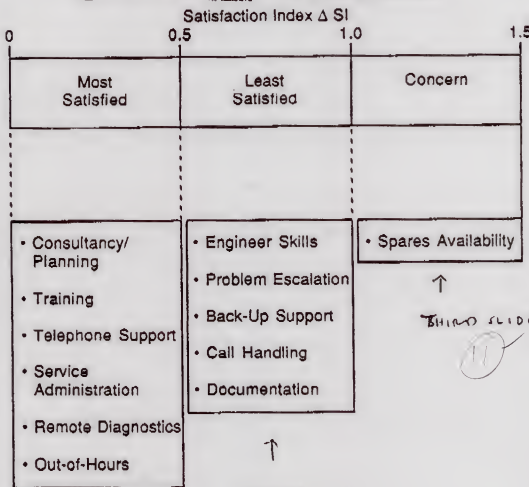
Summary of the results of the regression analysis

Variable	Model 1		Model 2		Model 3	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Age	35.5	10.5	35.5	10.5	35.5	10.5
Gender	0.5	0.5	0.5	0.5	0.5	0.5
Education	12.5	1.5	12.5	1.5	12.5	1.5
Income	15.5	5.5	15.5	5.5	15.5	5.5
Marital status	0.5	0.5	0.5	0.5	0.5	0.5
Health status	0.5	0.5	0.5	0.5	0.5	0.5
Religious affiliation	0.5	0.5	0.5	0.5	0.5	0.5
Political affiliation	0.5	0.5	0.5	0.5	0.5	0.5
Occupational status	0.5	0.5	0.5	0.5	0.5	0.5
Home ownership	0.5	0.5	0.5	0.5	0.5	0.5
Auto ownership	0.5	0.5	0.5	0.5	0.5	0.5
Travel frequency	0.5	0.5	0.5	0.5	0.5	0.5
Travel mode	0.5	0.5	0.5	0.5	0.5	0.5
Travel satisfaction	0.5	0.5	0.5	0.5	0.5	0.5
Travel frequency (continued)	0.5	0.5	0.5	0.5	0.5	0.5
Travel mode (continued)	0.5	0.5	0.5	0.5	0.5	0.5
Travel satisfaction (continued)	0.5	0.5	0.5	0.5	0.5	0.5

CAE8 III-2

Andrew
Henderson

HARDWARE SERVICE SATISFACTION



↑
THIRD SLIDE
(11)

↑
ONE SLIDE
(9)

STRESS

SENT ✓

(10)

(I am assuming you can't make 'one'
slide of this.

THE TABLE

THE TABLE is a summary of the results of the experiments conducted by the author, and is intended to be a guide to the reader in the selection of the most suitable material for the purpose of the experiment.

Material	Weight	Volume	Temperature	Time	Result
1	100	100	100	100	100
2	100	100	100	100	100
3	100	100	100	100	100
4	100	100	100	100	100
5	100	100	100	100	100

Material	Weight	Volume	Temperature	Time	Result
1	100	100	100	100	100
2	100	100	100	100	100
3	100	100	100	100	100
4	100	100	100	100	100
5	100	100	100	100	100
6	100	100	100	100	100
7	100	100	100	100	100
8	100	100	100	100	100
9	100	100	100	100	100
10	100	100	100	100	100

THE TABLE is a summary of the results of the experiments conducted by the author, and is intended to be a guide to the reader in the selection of the most suitable material for the purpose of the experiment.

~~CAE8 III-5~~**MAJOR CHALLENGES AND ISSUES**

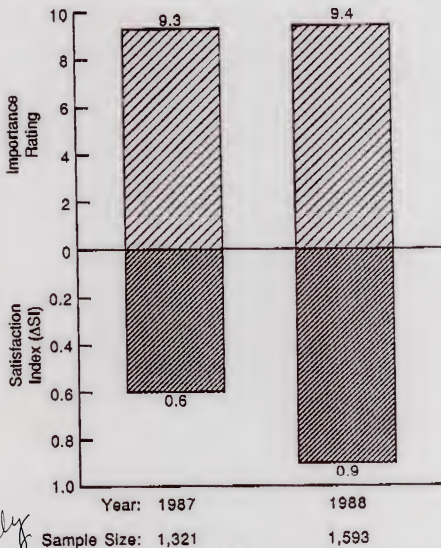
- Deterioration in User Satisfaction
 - Software Support
 - System Failure Rates
 - Systems Availability
 - Response/Repair
- Hardware Service
 - Engineer Skills
 - Spares Availability
- Software Support
 - Engineer Skills
 - Documentation

(12) ✓



~~CAE8 III-6~~

SYSTEMS AVAILABILITY TRENDS



hc only

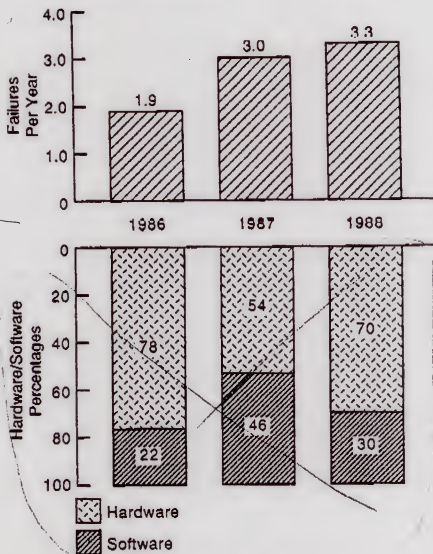
13 ✓

TABLE I
Summary of the results of the experiments

Experiment	Condition	Result
1	Control	Normal
2	Control	Normal
3	Control	Normal
4	Control	Normal
5	Control	Normal
6	Control	Normal
7	Control	Normal
8	Control	Normal
9	Control	Normal
10	Control	Normal
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94	Control	Normal
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96	Control	Normal
97	Control	Normal
98	Control	Normal
99	Control	Normal
100	Control	Normal

~~CAE8 III-7~~

SYSTEM FAILURE RATE TRENDS



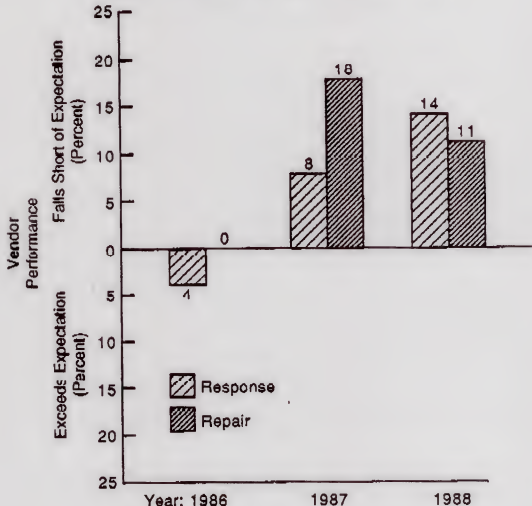
Sample Sizes: 1988 = 1,593
1987 = 1,321
1986 = 814

hc
only



~~CAE8 III-8~~

HARDWARE SERVICE RESPONSE/REPAIR TIME TRENDS



Sample Size: 814 1,321 1,593

Percentages Have Been Rounded.

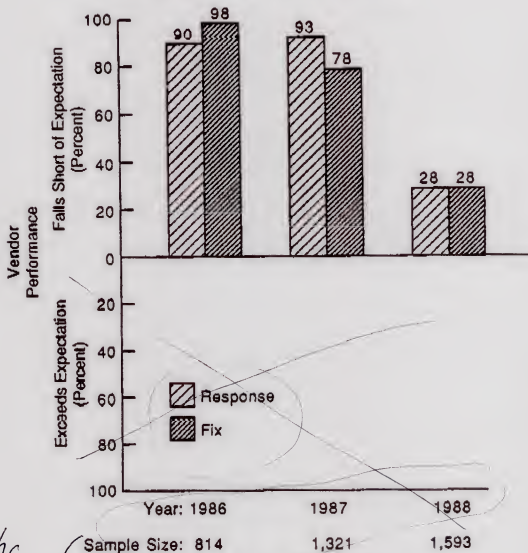
*on hc
 only*

15 ✓

THEORY



The graph shows the relationship between the concentration of a solution and its refractive index. The x-axis represents concentration in g/100 ml, ranging from 0 to 10. The y-axis represents the refractive index, ranging from 1.00 to 1.10. Four data series are plotted: a solid line with open circles, a dashed line with open circles, a solid line with filled circles, and a dashed line with filled circles. All series show a linear increase in refractive index with concentration, with the solid lines having a steeper slope than the dashed lines.

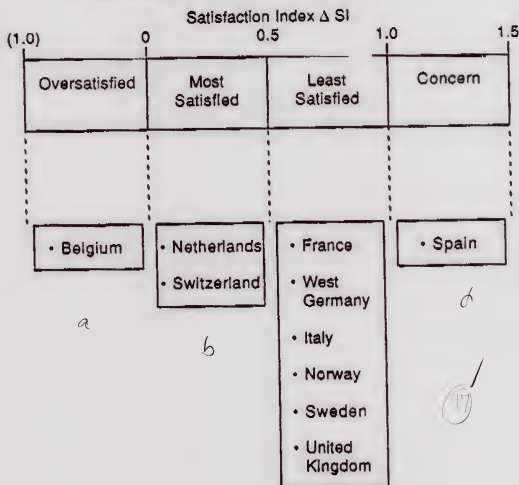
~~CAEB-III-9~~SOFTWARE SUPPORT
RESPONSE/FIX TIME TRENDS

Percentages Have Been Rounded.

(16) ✓



CAE8 III-11

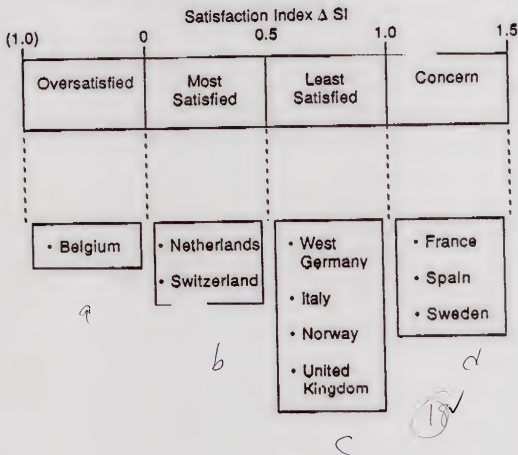
COUNTRY COMPARISONS
HARDWARE SERVICE SATISFACTION

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~~CAE8 III.12~~

COUNTRY COMPARISONS SOFTWARE SUPPORT SATISFACTION

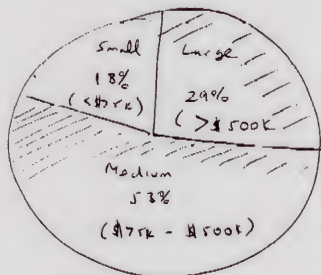


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M. E. White	101 Pine St.	Physician	Cornell
R. L. Green	234 Cedar St.	Engineer	MIT
S. K. Black	567 Birch St.	Farmer	UConn

Sample Distribution by System size



HC only

Sample size 1593

19



8

World Markets: 1987

\$ Billions

	<u>US</u>	<u>EUROPE</u>	<u>JAPAN</u>	<u>ROW</u>	<u>TOTAL</u>
Computer Hardware	54 62	33 38	28 32	6 7	121 139
M/W Maintenance	12 14	8 9	6 7	1	27 34
Data Comm. Hardware	14 16	7 8	4 5	2	27 31

INPUT

SLIDES PL - 3 and 3a

- Estimated world markets split by U.S., Japan, Europe, rest of the world in 1992.

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World Markets: 1987

	<u>US</u>	<u>EUROPE</u>	<u>JAPAN</u>	<u>ROW</u>	<u>TOTAL</u>
Data Comm.					
Maintenance	34	1	1	<1	67
Software	20 23	89	12, 14	45	44 51
Computer Services	44 51	23 26	67	2	75 86
	—	—	—	—	—
TOTAL	117 170	80 91 26	57 66	16 18	300 345

INPUT

NOTES:

- Computer services- Network services) T.S.
- Consultancy) - C.S.
- Custom software) - S.C.S.
- Turnkey systems).
- Hardware is 49% of world market.
- Europe 26% (\$80 billion) of world market.
- Overall customer hardware service (\$33 billion) 11%.
- Software business \$44 billion.

3

World Markets: 1992

\$ Billions

	<u>US</u>	<u>EUROPE</u>	<u>JAPAN</u>	<u>ROW</u>	<u>TOTAL</u>
Computer Hardware	88 101	50 58	50 58	12 14	200 231
Maintenance	16 18	13 15	7 8	2 3	38 44
Data Comm. Hardware	26 30	11 13	8 9	5 6	50 58

INPUT

NOTES:

15% growth in the areas MACH

cellular growth in the areas

World Markets: 1992³

\$ Billions

	<u>US</u>	<u>EUROPE</u>	<u>JAPAN</u>	<u>ROW</u>	<u>TOTAL</u>
Data Comm. Maintenance	56	2	2	1	10 11
Software	52 60	24 28	32 37	12 14	120 139
Computer Services	86 99	52 60	20 23	4 5	162 187
	—	—	—	—	—
TOTAL	273 314	152 176	119 137	36 43	600 670
					INPUT

NOTES:

SLIDES PL - 4 and 4a

- Overall growth per annum forecast at 15%.
- Note decreased percentage of hardware in 1992 from 50% in 1987 to 42% in 1992.
- Increased percentage taken by software and computer services underlines the need for vendors to be involved in all aspects of service.
- Hardware vendors positioning themselves as 'solution' companies.

Machine in rel. with 1/1/6

CSPE PL-4a

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

RESEARCH REPORT

Author	Title	Year	Page	Ref.
1. J. D. Jackson	Classical Electrodynamics	1975	1-10	1
2. E. Fermi	Thermodynamics	1956	11-20	2
3. L. D. Landau	Mechanics	1960	21-30	3
4. R. Feynman	Quantum Electrodynamics	1962	31-40	4
5. S. Weinberg	Gravitation and Cosmology	1973	41-50	5
6. A. Einstein	General Relativity	1916	51-60	6
7. H. Goldstein	Classical Mechanics	1950	61-70	7
8. D. J. Griffiths	Introduction to Quantum Mechanics	1968	71-80	8
9. P. Dirac	Principles of Quantum Mechanics	1958	81-90	9
10. J. von Neumann	Mathematical Foundations of Quantum Mechanics	1955	91-100	10

REFERENCES

1. J. D. Jackson, *Classical Electrodynamics*, Wiley, New York, 1975.

2. E. Fermi, *Thermodynamics*, Butterworths, London, 1956.

3. L. D. Landau, *Mechanics*, Pergamon Press, Oxford, 1960.

4. R. Feynman, *Quantum Electrodynamics*, Wiley, New York, 1962.

5. S. Weinberg, *Gravitation and Cosmology*, Wiley, New York, 1973.

6. A. Einstein, *General Relativity*, Birkhauser, Basel, 1916.

7. H. Goldstein, *Classical Mechanics*, Wiley, New York, 1950.

8. D. J. Griffiths, *Introduction to Quantum Mechanics*, Wiley, New York, 1968.

9. P. Dirac, *Principles of Quantum Mechanics*, Cambridge University Press, Cambridge, 1958.

10. J. von Neumann, *Mathematical Foundations of Quantum Mechanics*, Wiley, New York, 1955.

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SERVICE MARKET ANALYSIS

- o GROWTH AREAS
- o NEW SERVICE OFFERINGS
- o COMPETITION

(24)



~~CAE8 IV-4~~**CUSTOMER SERVICES MARKET
WESTERN EUROPE, 1988-1993**